

Information Briefing: Update On Near-Real Time Base Data Distribution And Archiving

Presented by

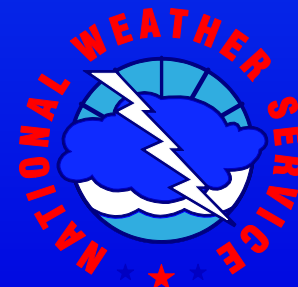
Tim Crum

NEXRAD Program Base Data Distribution Focal Point

Radar Operations Center

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NEXRAD Technical Advisory Committee





Background

- TAC Has Consistently Supported The Archive Of Level II Data (TN-9)
- TAC Has Had A Technical Need For The Real-Time Compression And Transmission Of WSR-88D Data (TN-23)
- ROC Has Briefed TAC At About Every Meeting On Level II Data
 - TAC Support Of Archiving Level II Data Helped Lead To Network-Wide Collection Beginning In 1994
 - 75,000+ Tapes In Archive
 - 13,200+ Tapes Copied To Fill Customer Requests
 - Recording Rates Across Network 55% In 1999 And Likely Declining



Background

(Continued)

- TAC Support Of Real-Time Connections To Base Data /Level II Helped Lead To Over 50 RIDDS Connections And RIDDS-Like Functionality, Base Data Distribution System (BDDS), Added To All NWS WSR-88Ds And 8 DOD RPGs
 - External Connections To Over 60 Sites (NEXRAD Agencies, Other Gov't Agencies, Universities, Commercial)
 - Base Data From 37 Radars Flowing To NCDC Electronically In Near Real Time – List Could Reach 50 This Summer
 - Suspended Level II Recording At 28 Sites – List Could Expand By 10+ This Summer



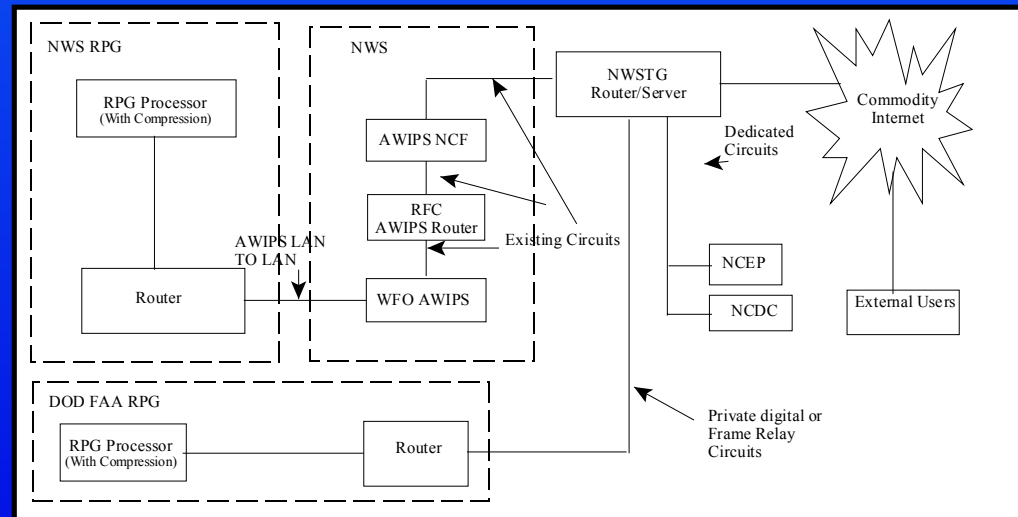
Recorder Replacement

- ROC Budgeted For FY02 And FY03 Funds For Level II Recorder Replacement - Recorders (Unsupportable By End Of FY03)
- ROC Recently Completed An Analysis Of 9 Options To Replace Level II Recorders
 - Obtained NWS and PMC Approval To Proceed With Electronic Approach Vice In Place Recorder Replacement
 - Working With AWIPS Program To Obtain Approval
 - NWS OS&T To Implement
 - Deployment Starts NET 5/03, Could Slip 6 Months If Required RPG Software Not Installed In Build 3 Or Other Problems Arise
 - Intent Is For Making Data Streams As Readily Available As Possible, Details TBD
 - Finalization Of Updating NWS Operational Requirement For These Data In Near Real Time Could Influence Implemented Approach



ROC Recommended Approach For Level II Recorder Replacement: Real-Time Collection, Transmission, And Archive Of Level II Data

- Data Compressed On The RPG
- NWS Data Travels Via WFO's AWIPS Network, Through RFC Hubs To The NCF
- NCF Sends Data To NWSTG, H/W In Place
- NWSTG Transmits To NCEP, NCDC, And External Customers
- DoD/FAA Locations Directly Connect To NWSTG Via Frame Relay





Connection Guidelines

- ROC Has Developed Updated Connection Guidelines – PMC To Provide Approval Or Comments By 6/15
 - Address The Areas That Make The June 1996 Guidelines Out Of Date
 - Agency focal points have reviewed, commented, and recommend approval
 - NOAA General Counsel Has Approved Updated Guidelines From Legal Perspective
- Two Phases Of New Guidelines
 - “Interim” – Before Central Collection Implemented
 - “Final” – After Central Collection Implemented



Connection Guidelines

(Continued)

- Summary Of Guidelines For “Interim” Phase
 - Signed MOA Required For Connections Inside A NEXRAD Facility
 - No Compression Hardware Installed Inside A NEXRAD Facility Unless Supporting A NEXRAD Agency Or Agency Directly Supporting A NEXRAD Agency
 - Remote BDDS Installed Only If O&M, Hardware, And Communications Funded By NEXRAD Agency
- Summary Of Guidelines For “Final” Phase
 - No Physical Connections Inside A NEXRAD Facility Unless Supporting A NEXRAD Agency Or Agency Directly Supporting A NEXRAD Agency Where The Operational Requirement For The Data Cannot Be Met By Central Server
 - Remote BDDS Installed Only If O&M, Hardware, And Communications Funded By NEXRAD Agency



Summary

- The NPMC Will Approve Or Comment On The Updated Guidelines By 6/15/02
- NWS OS&T To Determine Design And Implementation System
- Start Deployment Of Near Real Time Distribution in 2003
- Widespread Access To These Data In Near Real Time Possible Via Internet/Internet2



Sites Sending Level II Data To NCDC Electronically (As Of 1 May 2002)

- 1.KTLX Norman, OK
- 4.KLBB Lubbock, TX
- 7.KEMX Tucson, AZ
- 10.KLTX Wilmington, NC
- 13.KICX Cedar City, UT
- 16.KRAX Raleigh, NC
- 19.KMHX Morehead City, NC
- 22.KGLD Goodland, KS
- 25.KILN Cincinnati, OH
- 28.KIWX N. Indiana
- 31.KFFC Atlanta, GA
- 33.KDDC Dodge City, KS
- 36.KFDR Altus AFB, OK
- 2.KFWS Ft.Worth, TX
- 5.KINX Tulsa, OK
- 8.KYUX Yuma, AZ
- 11.KATX Seattle, WA
- 14.KFSX Flagstaff, AZ
- 17.KCLX Charleston, SC
- 20.KCAE Columbia, SC
- 23.KCYS Cheyenne, WY
- 26.KBUF Buffalo, NY
- 29.KPBZ Pittsburgh, PA
- 32.KGSP Greenville/Spartanburg, SC
- 34.KICT Wichita, KS
- 37.KUDX, Rapid City, SD.
- 3.KAMA Amarillo, TX
- 6.KSRX Ft.Smith, AR
- 9.KIWA Phoenix, AZ
- 12.KESX Las Vegas, NV
- 15.KHTX Huntsville, AL
- 18.KAKQ Norfolk, VA
- 21.KFTG Denver, C)
- 24.KDTX Detroit, MI
- 27.KLOT Chicago, IL
- 30.KCLE Cleveland, OH
- 35.KVNX Vance AFB, OK



NCDC WSR-88D WEB-Based Data Access

- NCDC will allow outside users access to the HDSS Access system (Mass store) for NEXRAD level II and Level III digital data via the NCDC home page. This will give users who know what sites/times they need direct access to the data. When available, NCDC will have a browsing tool interfaced with HDSS for displaying data prior to ordering. Over the next several weeks NCDC will modify HDSS access system for external use (NEXRAD data only)
- NCDC will conduct a test of the system before releasing the URL's.
- NCDC Provides Level II Data Via FTP And Can Send Several Gbytes Of Data Within Hours Of Ordering



NEXRAD Level II Data Availability At NCDC

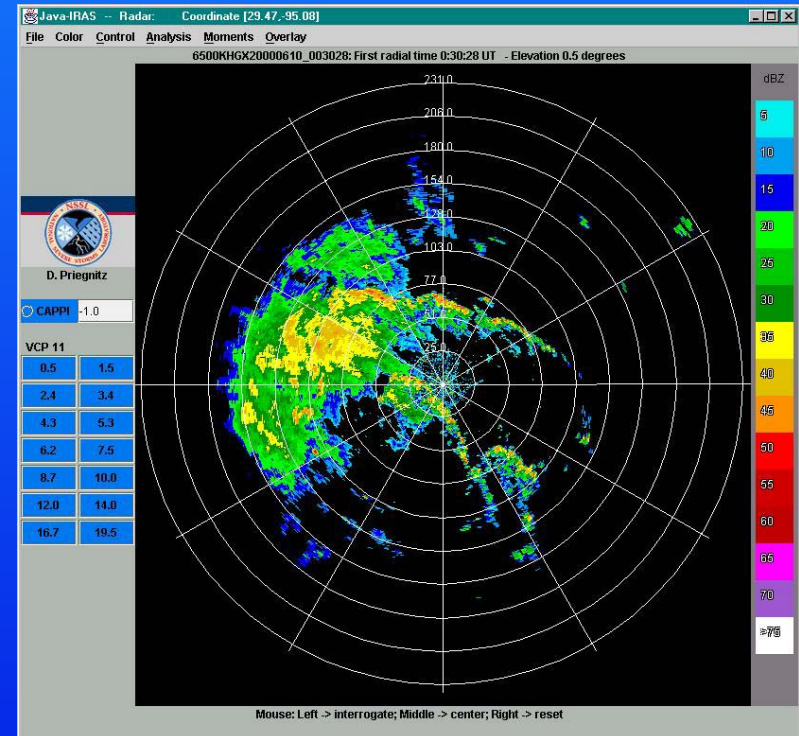
- ✓ NCDC objective: make NEXRAD level II (base) readily available to the user community in real/near real time as well as providing quick turn around for retrospective data (One Stop Shop for NEXRAD)
- ✓ NCDC is collaborating with NWS, NSSL, the University of Oklahoma & UNIDATA on the Collaborative Radar Allocation Field Test (CRAFT)
- ✓ NCDC data completeness for radar sites transmitting data electronically has increased to ~ 95%.
- ✓ All Level II data residing on 8mm tape are currently being migrated to NCDC robotic mass storage system (HDSS)
- ✓ 76,599 8mm tapes to migrate (50,000 tapes migrated)
- ✓ Vast improvements disseminating level II data from the HDSS verses 8mm tape





NEXRAD Level II Data Availability @ NCDC

- ✓ **IRAS** - retrieved 19.4GB level II data in 125 minutes from HDSS; If copied from tape retrieval time = 232 hours.
- ✓ **NEW!**- Interactive Radar Analysis System (IRAS) software available for download
- ✓ This application allows users to read and display realtime and archived Level II radar data on platforms supporting Java (version 1.3 and higher).
- ✓ URL <http://lwf.ncdc.noaa.gov/oa/radar/iras.html>
- ✓ **Coming Soon:**
 - * NCDC web based direct access to NCDC level II data historical archive (~ two months)
 - * IRAS web interface for browsing data prior to ordering
- ✓ **Investigative Studies:**
 - * Collaborating with NSSL, the University of Oklahoma and the University of Alabama to use Data Mining techniques on level II data to create spatial datasets based on unique weather events or phenomena





NEXRAD Level III Data Availability @ NCDC

NCDC ingests NEXRAD level III products via hard media (WORM, JAZZ) and electronically on dedicated line

- ✓ All required products are received on hard media approximately 2 months after the fact
- ✓ Only ~ 50 % of required products received via electronic ingest in near real time
- ✓ NCDC is ready to ingest all level III products via electronic ingest in near real time
- ✓ **NWS milestone** – to deliver all required level III products electronically by the end of 2002
- ✓ Level III data residing on hard media currently being migrated to NCDC HDSS
- ✓ Vast improvements disseminating level III data from HDSS verses hard media for customers requesting digital data (via FTP)
- ✓ Hard copy image requests are produced on the Principal User Processor (PUP) display system
- ✓ PUP will be replaced by the Open PUP (OPUP).
- ✓ NCDC collaborating with NWS to include in the revision to OPUP software, the capability to export graphic images to digital formats(TIFF, GIF, JPEG)
- ✓ **GOAL** – Replace hard copy orders with digital format

